

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. – 18. (Canceled)

19. (Currently Amended) ~~A method for providing seamless fail-over of communication between a client computer and a cluster of servers, wherein the cluster of servers~~ In a distributed computing system comprising a server cluster and a client computer, wherein the server cluster includes a first server and a second server, and wherein the client computer includes a client application, a cache, and a network access module (NAM) by which the client application communicates with the server cluster, wherein the network access module has a cache, a method for providing seamless fail-over connectivity between the client computer and the server cluster, the method comprising:

detecting a failure of a first Virtual Interface Architecture (VIA) protocol connection with between the first server in the server cluster and the client application, the first connection established using connection information of the first server mapped to a server name and cluster name of the server cluster; wherein the first server maps to a combination of a VIA cluster name and a VIA server name;

sending a Server Resolution Protocol request to the server cluster requesting connection information for a server associated with the server name and the cluster name of the server cluster of servers, wherein the request includes the combination of the VIA cluster name and the VIA server name;

receiving a Server Resolution Protocol response from the second server, wherein the response includes a network address from the server cluster comprising connection information of the second server;

caching the received response from the second server in the cache of the network access module of the client computer such that the cache contains a mapping between the network address connection information of the second server and the combination of the VIA cluster name and the VIA server name; and

establishing a second Virtual Interface Architecture protocol connection between the client application and with the second server ~~by way of the network address~~ using the connection information of the second server,

wherein the detecting, the sending, the receiving, caching, and the establishing are performed by the NAM to provide seamless fail-over connectivity in a manner ~~occur by the network access module of the client computer~~, transparent to the client application.

20. (Canceled)

21. (Currently Amended) The method of claim 19 ~~20~~, wherein the establishing the second connection comprises retrieving ~~[[the]]~~ a network address from the connection information of the second server from the cache.

22. (Previously Presented) The method of claim 21, further comprising verifying that the second server maps to the server name.

23. (Previously Presented) The method of claim 22, wherein verifying that the second server maps to the server name comprises verifying that the second server is responsive to the server name.

24. (Currently Amended) The method of claim 19 ~~20~~, further comprising purging the cache prior to caching the response from the second server.

25. (Currently Amended) The method of claim 19, wherein the Server Resolution Protocol request is sent by User Datagram Protocol (UDP).

26. (Previously Presented) The method of claim 19, wherein the first server and second server store and retrieve relational data by way of Structured Query Language (SQL) commands.

27. (Previously Presented) The method of claim 19, wherein the first server is designated as active and the second server is designated as passive.

28. (Previously Presented) The method of claim 27, wherein the second server periodically sends a keep-alive message to the first server.

29. (Previously Presented) The method of claim 28, wherein the second server assumes designation as active when the first server fails to response to the keep-alive message.

30. (Currently Amended) The method of claim 19, wherein the connection information provided in the Server Resolution Protocol response contains a plurality of port numbers, wherein each port number corresponded to a different communications protocol.

31. (Previously Presented) The method of claim 19, wherein the first connection and the second connection comprise VIA formatted packets.

32. (Currently Amended) A computer readable storage medium comprising computer executable instructions that are executable by a computer to perform a method for providing seamless fail-over connectivity in a distributed system comprising a client computer and a server cluster, wherein the server cluster includes a first server and a second server, and wherein the client computer includes a client application, a cache, and a network access module (NAM) by which the client application communicates with the server cluster, ~~for providing seamless fail-over of communication between a client computer and a cluster of servers, wherein the cluster of servers includes a first server and a second server and wherein the client computer includes a client application and a network access module by which the client application communicates, wherein the network access module has a cache, the computer readable storage medium including computer executable instructions to perform the method comprising:~~

detecting a failure of a first Virtual Interface Architecture (VIA) protocol connection ~~with~~
between the first server in the server cluster and the client application, the first connection
established using connection information of the first server mapped to a server name and cluster
name of the server cluster; wherein the first server maps to a combination of a VIA cluster name
and a VIA server name;

sending a Server Resolution Protocol request to the server cluster requesting connection
information for a server associated with the server name and the cluster name of the server
cluster of servers, wherein the request includes the combination of the VIA cluster name and the
VIA server name;

receiving a Server Resolution Protocol response ~~from the second server~~, wherein the
response includes a network address from the server cluster comprising connection information
of the second server;

caching the received response ~~from the second server~~ in the cache of the network access
module of the client computer such that the cache contains a mapping between the network
address connection information of the second server and the combination of the VIA cluster
name and the VIA server name; and

establishing a second Virtual Interface Architecture protocol connection between the
client application and ~~with the second server by way of the network address~~ using the connection
information of the second server,

wherein the detecting, the sending, the receiving, caching, and the establishing are
performed by the NAM to provide seamless fail-over connectivity in a manner occur by the
~~network access module of the client computer~~, transparent to the client application.

33. (Canceled)

34. (Previously Presented) The computer readable storage medium of claim 32,
wherein the first connection and the second connection comprise VIA formatted packets.

35. (Currently Amended) A system for providing seamless fail-over of client connectivity communication with a server cluster of servers, wherein the cluster of servers includes a first server and a second server, the system comprising:

a client application;

a network access module by which the client application communicates; and

a cache ~~connected to the network access module,~~

wherein the network access module (i) detects a failure of a first Virtual Interface Architecture (VIA) protocol connection ~~between the client application and a~~ with the first server ~~in the server cluster,~~ wherein the first connection is established using connection information of the first server which is mapped to a server name and cluster name of the server cluster ~~first server maps to a combination of a VIA cluster name and a VIA server name;~~ (ii) sends a Server Resolution Protocol request to the server cluster requesting connection information for a server associated with the server name and the cluster name of the server cluster, ~~wherein the request includes the combination of the VIA cluster name and the VIA server name;~~ (iii) receives a Server Resolution Protocol response ~~from the second server,~~ wherein the response includes a network address from the server cluster comprising connection information of ~~[[the]]~~ a second server; (iv) caches the received response ~~from the second server~~ in the cache of the network access module of the client computer such that the cache contains a mapping between the ~~network address~~ connection information of the second server and the combination of the VIA cluster name and the VIA server name; and (v) establishes a second Virtual Interface Architecture protocol connection between the client application and with the second server ~~by way of the network address using the connection information of the second server,~~ wherein the detecting, the sending, the receiving, caching, and the establishing are performed by the NAM to provide seamless fail-over connectivity in a manner occur by the network access module of the client computer, transparent to the client application.

36. (Canceled)

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37. (Previously Presented) The system of claim 35, wherein the first connection and the second connection comprise VIA formatted packets.